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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,865	07/23/2001	Shuichi Kagawa	2257-0193P-SP	1245
2292	7590	02/24/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			NGUYEN, KEVIN M	
			ART UNIT	PAPER NUMBER
			2674	

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/909,865

Applicant(s)

KAGAWA ET AL.

Examiner

Kevin M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. <u>2/16/2006</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

1. This office action is made in response to applicant's interview summary filed on 2/16/2006. Claims 1-40 are currently pending in the application. The office action filed 11/16/2005, with respect to the rejection(s) of claim(s) 1-40 under the statutory basis for the previous rejection have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art references.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katayama (newly cited, US 5,817,556) in view of Deguchi et al (previously cited, US 6,480,202) hereinafter Deguchi.

4. As to claims 1 and 21, Katayama teaches an image display device (see Fig. 3), comprising:

a black correction part performing a black correction processing of correcting a black reproducibility of an image data containing a predetermined number of color data, to output black-corrected data [a black setup 102, a field programmable gate array (FPGA) 12 includes a setup correction subtractor 20 which subtracts black setup data supplied by computer 16 from the monochrome pixel see fig. 3, col. 4, lines 20-22];

an image display means [a display device 18, see Fig. 3] performing an image display on a predetermined screen based solely on said black-corrected image data [there is only black setup data based on a color image sensor 10, Fig. 3, col. 3, lines 57-65];

said black correction part [see Fig. 3] including:

a black-display characteristic specifying means performing a predetermined operation of specify a black-display characteristic specifying data related to a characteristic in displaying black with image display means [see col. 7, lines 59-62];

a black-approximated data calculating means [at least a subtractor 20, see Fig. 3] calculating a black-approximated data composed of said predetermined number of color data [at least pre-grain RGB 24, Fig. 3] and related to at least one of luminance, chromaticity and tristimulus values [at least RGB pixel, Fig. 3] in displaying black based on said characteristic in displaying black with said image display means on the basis of said black-display characteristic specifying data;

and a black-correction processing executing means [a computer 16, see Fig. 3] executing said black correction processing to said image data in units of said predetermined number of color data based on said black-approximated data, to output said black-corrected image data [the processing method of Fig. 3, see col. 4, line 42 through col. 7].

Accordingly, Katayama teaches all of the claimed limitation, except for a black correction data related to at least one of luminance value.

However, Deguchi teaches a black correction matrix 100a which includes measured XYZ values including luminance signal Y (see Fig. 8 , col. 8, lines 5-39).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to implement the measured XYZ values (equation 4) including luminance signal Y as taught by Deguchi in the color correction matrix (30) of Katayama in order to achieve the benefit of improve the quality contrast of the picture being displayed in effect of ambient light environment (see Deguchi col. 4, lines 48-51).

5. As to claims 2 and 22, Katayama teaches wherein said black-correction processing executing means includes a black correction means performing a subtraction processing of subtracting black-approximated data from said image data in units of said predetermined number of color data, to output said black-corrected image data a subtraction data [the setup correction subtraction 20, see Fig. 3, col. 4, lines 20-26].

6. As to claims 3 and 23, Katayama teaches wherein said subtraction data includes said black-approximated data itself [the setup correction subtraction 20 depends on only black data from a sensor 10', see Fig. 3, col. 4, lines 20-26].

7. As to claims 4 and 24, Katayama teaches wherein said black correction means includes: subtraction means subtracting said black-approximated data from said image data in units of said predetermined number of color data [the setup correction subtraction 20, see Fig. 3, col. 4, lines 20-26];

a limiter setting a color data of less than zero in said predetermined number of color data contained in said data after subtraction to zero, to obtain said black-corrected image data obtain data [at least $a \ll 3$, see col. 7, lines 35-45].

8. As to claims 5 and 25, Katayama teaches wherein said black correction means includes: a subtraction data calculating means calculating said black-approximated data itself as said subtraction data when said image data is larger than a predetermined value; and a subtraction means subtracting said subtraction data from said image data in units of said predetermined number of color data, to obtain data after subtraction, and outputting said data after subtraction as said black-corrected image data [the setup correction subtractor 20 subtracts black setup data from the monochrome pixel, see Fig. 3, col. 4, lines 20-26].

9. As to claims 6 and 26, Katayama teaches wherein said subtraction data calculating means includes a subtraction data calculating means multiplying said black-approximated data with a multiplication factor of less than "1", when said image data is less than said predetermined value, to obtain said subtraction data [to multiply these coefficients by an arbitrary number "a", $2.0 \times a = a \ll 1$, see col. 6, lines 52-59].

10. As to claims 7 and 27, Katayama teaches wherein said black-correction processing executing means includes: a look-up table storing a table data; and a table data writing means, writing data in the form of a table capable of deriving one of said black-corrected image data from said image data as said table data, into said look-up table based on said black-approximated data, said look-up table obtains said black-corrected image data based on said image data by referring to said table data [a color

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correction matrix data 30, and red, green and blue fine white balance data 28, see Fig. 3, col. 4, lines 32-35].

11. As to claims 8 and 28, Deguchi teaches wherein said black-display characteristic specifying data includes data indicating a characteristic of a reflected light of external light on the surface of said predetermined screen of said image display means [see Figs. 6 and 10, col. 7, lines 59 through col. 8, line 4].

12. As to claims 9, 10, 29 and 30, the combination of Katayama and Deguchi teaches wherein said black-approximated data calculating means includes a black-approximated data calculating means obtaining a specified value of luminance of a reflected light of external light based on said black-display characteristic specifying data, and calculating said black-approximated data such that a difference between the luminance of the color displayed on said image display means based on said black-approximated data and the luminance in displaying black with said image display means is equal to said specified value [see equation 9a-b of Katayama, and equation (4) of Deguchi].

13. As to claims 11-15 and 31-35, Katayama teaches wherein said characteristic of a reflected light of external light includes a brightness of the reflected light of external light, and said black-approximated data calculating means includes a black-approximated data calculating means calculating said black-approximated data based on said black-display characteristic specifying data by referring to a chromaticity data indicating a ratio of tristimulus values of a reflected light of external light and a

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correlation between a color data and tristimulus values in said image display means [see col. 4, line 60 through col. 5, line 10].

14. As to claims 16 and 26, Deguchi teaches wherein said black-display characteristic specifying data includes data indicating a characteristic in displaying black with said image display means [see Fig. 10, col. 7, lines 59 through col. 8, line 4].

15. As to claims 17, 18, 37 and 38, the combination of Katayama and Deguchi teaches wherein said black-approximated data calculating means includes a black-approximated data calculating means obtaining a specified value of luminance in displaying black based on said black-display characteristic specifying data, and calculating said black-approximated data such that a difference between the luminance of the color displayed on said image display means based on said black-approximated data and the luminance in displaying black with said image display means is equal to said specified value [see equation 9a-b of Katayama, and equation (4) of Deguchi].

16. As to claims 19, 20, 39 and 40, the combination of Katayama and Deguchi teaches wherein said characteristic in displaying black includes a brightness in displaying black, and said black-approximated data calculating means includes a black-approximated data calculating means calculating said black-approximated data based on said black-display characteristic specifying data by referring to tristimulus values in displaying black in the absence of external light, a ratio of tristimulus values of a reflected light of external light, and a chromaticity data indicating a correlation between a color data and tristimulus values in said image display means [see equation 9a-b of Katayama, and equation (4) of Deguchi].

Conclusion


17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Nguyen whose telephone number is 571-272-7697. The examiner can normally be reached on MON-THU from 9:00-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick N. Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8000.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the Patent Application Information Retrieval system, see <http://portal.uspto.gov/external/portal/pair>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KMN
February 20, 2006

Kevin M. Nguyen
Patent Examiner
Art Unit 2674


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SUPERVISORY PATENT EXAMINER